

ABSTRACT**RE-ENCODING ILLEGAL OP CODES INTO A SINGLE ILLEGAL OP
CODE TO ACCOMMODATE THE EXTRA BITS ASSOCIATED WITH
PRE-DECODED INSTRUCTIONS**

5 A method and system for utilizing bits in a collection of illegal op codes in
order to enable pre-decoded instructions to be stored in an instruction cache without
increasing the number of bits required to represent the pre-decoded instructions.
Upon fetching an instruction from memory, the op code is examined for membership
10 in a collection of illegal op codes. If the instruction op code is a member of this
collection, the instruction may be re-encoded to use a different, common illegal op
code. If the instruction op code is not a member of the collection of illegal op codes,
but is instead an instruction to be stored in the instruction cache in a pre-decoded
format, the additional pre-decoded information may be stored in the instruction
15 encoding by utilizing the portion of the op code space which has been vacated by the
re-encoding of the illegal op codes.

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